21 December 2012

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TENTATIVE WASTE DISCHARGE REQUIREMENTS ORDER FOR HORIZON NUT, LLC AND GLOBAL AG PROPERTIES USA, LLC, LOST HILLS PISTACHIO PROCESSING PLANT, KERN COUNTY

This letter transmits my comments on the subject Tentative Order. I am a resident of Fresno County and a California registered civil engineer with experience in water quality control regulation and evaluating the effects to soil and groundwater from discharges of food processing waste to land for reuse, treatment, and disposal. I reviewed the Tentative Order, along with Google Map satellite images of the discharge area, and determined several shortcomings, which I describe below. I offer many recommendations in the hope that staff will revise the Tentative Order accordingly, or provide justification in its *Response To Comments* why staff believes the recommended changes are not warranted.

GENERAL COMMENTS. Should the Regional Board adopt the Tentative Order, it would establish new waste discharge requirements that cannot be met for an ongoing land discharge of high-strength food processing waste initiated decades ago by various parties in apparent violation of the California Water Code and noncompliance with the California Environmental Quality Act. Based on my review of the Tentative Order, I have determined that it proposes, among other things, to:

- Base the Regional Board's decision to adopt the Tentative Order without a CEQA evaluation by declaring the 1980-vintage Plant (and its food processing waste storage, reuse, and disposal operations) an "existing facility" exempt from CEQA review (CCR, title 14, section 15301), yet the discharge apparently
    - Began and continues without a CEQA review,
    - Was increased in the last decade, and
    - Will violate or threaten to violate the Tentative Order upon adoption.
- Exempt the discharge of residual solids to fallow land from Title 27.
- Authorize considerable discharge flow limits apparently equivalent to wastewater storage and disposal capacity in average rainfall years.
- Require application of waste constituents at reasonable agronomic rates to the pistachio orchards that comprise the 1,460-acre Wastewater Application Area, yet the discharge's annual potassium loading appears to far exceed crop demand.
- Require waste be managed to preclude the release of waste constituents in a concentration or mass that causes violation of the Groundwater Limitation (no degradation), yet authorize the impoundment of high-strength wastewater in unlined ponds for settleable solids removal treatment and storage.

Because the proposed discharge will violate the Tentative Order upon its adoption, its environmental impact should be considered significant for CEQA purposes. Accordingly, the Regional Board is obligated to assume lead agency status under CEQA and perform an environmental review of the proposed discharge in accordance with CEQA and CEQA Guidelines before it adopts a waste discharge requirements order for the discharge. Should the Regional Board adopt the Tentative Order in the absence of a CEQA review, it would be hard not to conclude that the Regional Board is shirking its responsibility under CEQA and gambling that no one will notice or challenge its decision.

The discharge may be of short duration, but it is considerable – 2.3 mgd monthly average and 4.6 mgd daily maximum. The discharge is high-strength with respect to its organic content (average 5-day biochemical oxygen demand of 3,200 mg/L) and salinity (especially potassium). Granted, area groundwater is naturally poor quality for salinity, but it is of high quality for nitrate and contains very low concentrations of potassium. Nitrate is a decomposition byproduct of the organic nitrogen waste constituents released by the proposed discharge and, in accordance with the Antidegradation Policy, subject to best practicable treatment and control.

While the sources of waste constituents differ, it is instructive to compare the flow and BOD load of the discharge to that generated by a municipality. This information gives the Regional Board and the public a sense of the magnitude of the discharge, if only for its hydraulic storage and disposal capacity requirements. The proposed total annual discharge flow of 130 million gallons is equivalent to the annual sewage flow from about 3,600 persons, and the proposed monthly average discharge flow of 2.3 mgd is equivalent to the sewage flow from 23,000 persons.[1] The discharge's annual BOD load is equivalent to that generated annually by about 28,500 persons, and the average daily BOD load is equivalent to that generated daily by almost 184,000 persons.[2] Even though staff will contend that this comparison is irrelevant, it shows how the proposed discharge is considerable with respect to flow and BOD load. It also has the potential to contribute to the probable cumulative environmental effects from other large-scale pistachio processing waste discharges in the area (i.e., Paramount Farms).

SPECIFIC COMMENTS – CEQA. The Tentative Order provides conflicting information regarding when the Plant is presumed to have begun operating. The Information Sheet states the Plant has been operating at least since the 1980s and Finding 1 states it has been operating since at least 1990. Finding 1 references a 2003 Report of Waste Discharge for the Plant's discharge submitted by A & P Growers, LLC and mentions two proposals submitted since 2003 to increase discharge flow, wastewater storage capacity and disposal area: one for an increase in discharge flow and acreage proposed by A & P Growers in 2006 and 2009 in supplements to its 2003 RWD, and a second for additional increases in discharge flow and acreage described in a 2012 technical report submitted by Horizon Nut, LLC. Finding 7 describes the Plant's six unlined wastewater ponds, five of which were in existence in 2003. Finding 50 states, "As indicated in Finding 1, the Discharger has submitted additional information in 2006, 2009, and 2012 updating the status of the Plant's continued operation. As such, the

[1] Assumes a per capita sewage flow 100 gpd
[2] Assumes an average discharge BOD of 3,200 mg/L, average discharge flow of 2.3 mgd, per capita sewage flow of 100 gpd, and municipal sewage BOD of 400 mgL

adoption of this Order for an existing facility is exempt from the requirements of California Environmental Quality Act in accordance with California Code of Regulations, title 14, section 15301."

Merely stating that A & P Growers then later Horizon Nut, which evolved out of A & P Growers in June 2008[3], "has submitted additional information…updating the status of the Plant's continued operation" does not, in itself, justify the Regional Board's determination that the Plant and its discharge is an existing facility exempt from CEQA review, especially when that "additional information" includes proposals for increasing discharge flow and acreage and, as a result, its probable environmental effects.

It is unclear when staff considers the Plant to be operating at baseline (or existing) conditions. Perhaps the existing conditions were described in the initial 2003 RWD, and the proposed increases in discharge flow, wastewater pond storage, and reuse/disposal acreage over the years since are negligible, represent only a minor alteration in the discharge, and do not constitute an expansion of the Plant's existing use. The Tentative Order does not identify the monthly average, daily maximum, and yearly total discharge flow rates proposed in the 2003 RWD. It is important to cite these rates as they are necessary to compare to the discharge flow rates and acreage proposed in Horizon Nut's 2012 technical report. This, in turn, is necessary to evaluate whether the increases in discharge flow and acreage beyond that described in the 2003 RWD are negligible or if they constitute an expansion of the Plant and disqualify the discharge from meeting CEQA's existing facility criteria. In any event, this is a moot point, as the "existing facility" exemption does not apply to this discharge because it is not capable of complying with the terms and conditions of the Tentative Order, as explained below.

> Recommendation 1: Identify in Finding 1 (or the Information Sheet) the discharge flow rates (monthly average, daily maximum, yearly total) and Wastewater Application Area (acres and APNs) proposed in the 2003 RWD and its 2006 and 2009 supplements submitted by A & P Growers.
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> Recommendation 2: Revise Finding 50 and the Information Sheet to provide a discussion explaining in more detail why the discharge qualifies for the "existing facility" exemption. The discussion should compare the Plant's historic discharge flow rates and disposal area to the increased discharge flow rates and application area identified in the 2006 and 2009 supplements to the RWD and the 2012 technical report cited in Finding 1. The justification should explain why the increased discharge flow rate and disposal area, as proposed in Horizon Nut's 2012 technical report, do not constitute an expansion of an existing use or are comprise minor alterations in the Plant's operation or otherwise negligible.
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> Recommendation 3: If, upon re-evaluation of the discharge and its potential to violate the Tentative Order and otherwise cause significant environmental effects, staff continues to propose the Regional Board determine that the discharge qualifies for the existing facility exemption, staff should submit a Notice of Exemption to the Governor's Office of Planning and Research, State Clearinghouse, promptly following order adoption.

[3] From Horizon Nut's website: http://www.horizonnut.com/index-1.html

> Recommendation 4: If, upon re-evaluation of the discharge and its potential to cause significant environmental impact (e.g., violating the WDR), staff determines that Regional Board is obliged to assume lead agency status and prepare a CEQA evaluation of the discharge, staff should pull the Tentative Order and re-circulate a revised Tentative Order and accompanying draft CEQA document.

FLOOD PROTECTION. Finding 20 indicates that the Plant, its associated wastewater ponds, and most of the Solids Application Areas are within FEMA Zone A, an area within the 100-year floodplain. The finding does not state whether any wastewater ponds used for irrigation reservoirs are also in the 100-year floodplain. Finding 19 mentions how elevated berms and tail water collection ponds preclude the runoff of irrigation water from the Wastewater Application Area. It does not mention whether the Solids Application Areas are similarly equipped to preclude discharge of waste constituents to surface waters and surface water drainage courses during wet years in violation of Discharge Prohibition A.1. The finding should address this issue and declare whether (or not) the discharger's flood protection measures are adequate to comply with Discharge Specification C.6.

> Recommendation 5: Revise Finding 20 to further describe the discharger's flood protection measures as mentioned above, and state whether these measures are adequate to comply with Discharge Specification C.6.

WATER BALANCE MODEL. Finding 16 indicates that the water balance model contained in the RWD determined the discharger's wastewater storage and disposal capacity is sufficient to comply with the Tentative Order's discharge flow limitations. However, the model results supporting this claim assume average rainfall conditions. Unless information can be provided to demonstrate otherwise, in wet years the discharger may violate prohibitions regarding changes in discharge management and location and discharge to surface waters or surface water drainage courses, as well as violate requirements for wastewater pond management and hydraulic loading. Typically, water balances submitted in reports of waste discharges to land use rainfall years of 100-year return frequency or, at least, of 25-year return frequency to demonstrate adequate waste storage and disposal capacities in wet years. Demonstration of wet weather capacity is necessary to evaluate the potential in wet years for waste to be discharged offsite to lands not authorized to receive the waste or worse, to surface waters or surface water drainage courses. The finding should indicate whether the model demonstrates compliance in wet years with the discharge flow limits, as well as with other applicable terms and conditions (e.g., Discharge Specification D.3 regarding hydraulic loading, D.6 regarding restrictions on wastewater applications when soils are saturated, D.9.a regarding 48-hour infiltration of wastewater for mosquito control).

> Recommendation 6: Re-examine the discharger's water balance model and, as necessary, reduce the initial discharge flow limits to rates not exceeding wastewater storage and disposal capacity in rainfall years of at least 25-year return frequency. Consider authorizing the proposed flow rates only after the discharger satisfies a new provision requiring certification that the wastewater storage and disposal capacity is sufficient to comply with the WDR in rainfall years of at least 25-year return frequency.

> Recommendation 7: Include information in the findings (e.g., like Finding 28) describing discharge area surface water runoff and receiving waters, and list designated beneficial uses of identified surface waters.

WASTEWATER PONDS AND IRRIGATION RESERVOIRS. Finding 7 describes the discharge to six unlined wastewater ponds near the Plant. Processing wastewater is discharged without solids removal treatment (e.g., screening) to Pond 1, where settleable solids (mostly hulls) accumulate and decompose. Effluent from Pond 1 is discharged to Pond 2 and, as required, to Ponds 3 through Pond 6 for emergency storage. The Tentative Order does not describe what conditions require discharge to these emergency storage ponds and how long they are used each season. Finding 10 states Pond 2 effluent is pumped to an irrigation reservoir near the Wastewater Application Area. Apparently, there are four irrigation reservoirs, according to staff. Attachment 1 should locate these, and the Information Sheet should provide information on the dimensions of all wastewater ponds. Once the effluent reaches these irrigation reservoirs, it is reportedly diluted with irrigation water from the Berrenda Mesa Canal at a ratio of about 25% wastewater and 75% irrigation water, then pumped through sand filters before sprinkler-applied to 1,460 acres of pistachio orchards comprising the Wastewater Application Area. The irrigation reservoirs impound the same wastewater as Pond 2 and should be classified as wastewater ponds and subject to the same requirements as the wastewater ponds near the Plant.

Finding 8 states the percolation of impounded wastewater is estimated to be 10.2 inches/year. Information on the area dedicated for wastewater storage is necessary to translate this percolation rate to a mass loading of waste constituents.

Finding 12 presents a characterization of wastewater pond effluent that shows high average concentrations of listed constituents (e.g., 3,200 mg/L BOD; 134 mg/L TKN; 1,600 mg/L FDS; 583 mg/L potassium). The Tentative Order does not characterize the wastewater discharged to Pond 1, however it can be assumed to contain higher concentrations of settleable solids and, as a result, decomposable waste constituents. The settleable solids that accumulate in Pond 1 are currently removed every two years. Because wastewater impounded in Pond 1 infiltrates through the organic-rich sludge layer before reaching soil, the seepage released to soil from Pond 1will contain higher concentrations of certain waste constituents than pond influent.

> Recommendation 8: Revise Finding 8 to provide information on the dimensions on the wastewater ponds near the Plant and the four wastewater ponds in the Waste Application Area that serve as irrigation reservoirs. Using the waste characterization data presented in Finding 12, determine the mass loading of nitrogen released annually to soil from the operation of all wastewater ponds. Re-evaluate whether this mass loading threatens to degrade underlying groundwater, as described below.

> Recommendation 9: Revise Attachment 1 to identify the locations of all irrigation reservoirs. Clearly designate irrigation reservoirs used to impound wastewater as wastewater ponds that are subject to all applicable terms and conditions of the Tentative Order, including its Monitoring and Reporting Program.

Recommendation 10: Revise Finding 10 to include a description of how sand filter backwash wastewater is managed and discharged.

NUISANCE. Features of the discharge that may cause nuisance odors and vectors include the lack of aeration of wastewater discharged to ponds near the Plant and to ponds within the Wastewater Application Area serving as irrigation reservoirs. Another feature is the discharge's potential for excessive instantaneous BOD loadings, something that can be controlled by diligent wastewater monitoring and management. Also, high-BOD wastewater temporarily stored in the sprinkler irrigation delivery system may become septic quickly and generate offensive odors when discharged. Another feature is the removal, handling, and disposal of pond sludge. Also, the sprinkler application of wastewater on portions of the Wastewater Application Area near Highway 33 may spray wastewater onto vehicles under windy conditions.

Discharge Specification C.3 states, "Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050." Standard Provision A.11 states, "Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the California Water Code, Section 13050." The discharge area is virtually unpopulated. Individuals who may be subjected to objectionable odors and vectors created by the discharger's treatment and disposal of waste include Plant employees, employees of the Conoco Phillips Pipe Line Facility near the solids disposal area, as well as the occupants of vehicles traveling Highway 33 and other roads in the discharge vicinity.

To ensure the discharger's waste treatment, storage, and disposal methods do not adversely impact individuals working in the general area of the discharge, as well as occupants of vehicles traveling on Highway 33, the Tentative Order should require the discharger to conduct the discharge in a manner that does not result in the detection of objectionable odors beyond the boundaries of the discharger's property. This will protect these individuals from the threat of enduring objectionable conditions created by the discharge without having to justify that the discharge has impacted "an entire community or neighborhood, or any considerable number of persons" (see California Water Code section 13050(m)(2)).

Recommendation 11: Include a discharge specification that requires the discharge to be managed in a manner that precludes the development of objectionable odors or vectors perceivable beyond the discharger's property (e.g, "Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.").

Recommendation 12: Include a requirement for flushing with fresh (canal) water all pressurized pipelines conveying wastewater upon completion of waste application to preclude the generation of objectionable odors perceivable beyond the discharger's property (e.g., "Irrigation pipelines shall be flushed with fresh water after wastewater application as often as needed to ensure continuous compliance with [the Discharge Specification regarding objectionable odors perceivable beyond the discharger's property.]").

Recommendation 13: Include a Discharge Prohibition addressing discharge on windy days (e.g., "Application of treated wastewater to the Wastewater Application Area using sprinkler irrigation is prohibited when wind velocities exceed 20 miles per hour.").

GROUNDWATER DEGRADATION. The seepage of high-strength wastewater from unlined wastewater ponds (especially Pond 1) may, over time, degrade and pollute area groundwater for nitrate, in threatened violation of the Tentative Order's Groundwater Limitation (no degradation), as well as Discharge Specification C.2 (no pollution). The Tentative Order does not require groundwater monitoring. To evaluate the potential for wastewater pond seepage to degrade groundwater from nitrate and other waste constituents (either in the discharge or as a result of soil decomposition of applied waste constituents), the Tentative Order should require the annual monitoring of soils underlying the most heavily used wastewater ponds near the Plant, as well as each wastewater pond used as an irrigation reservoir. Should the resulting soil monitoring data show excessive nitrate (and/or other waste constituents) at depth compared to background levels, then the Tentative Order should allow the Executive Officer to require the discharger to propose and complete a project to install liners in wastewater ponds as a best practicable control measure.

Recommendation 14: Revise Discharge Specification C.9 to stipulate that solids shall be removed from wastewater ponds annually by 1 August. Increasing the frequency with which sludge is removed from wastewater ponds should result in lower concentrations of certain waste constituents in pond seepage, and should be implemented as a practicable control measure.

Recommendation 15: Revise the Tentative Order's Monitoring and Reporting Program to require at least one soil profile monitoring location in each wastewater pond used during the season for wastewater treatment or storage, and monitoring of that station before the start of the processing season for applicable waste constituents of concern.

Recommendation 16: Include a provision requiring the discharger to submit a technical report within 180 days of Order adoption describing a feasibility study of implementing pretreatment (e.g., screening) to remove solids from wastewater before it is discharged to ponds. Adding solids removal pretreatment will greatly reduce the sludge accumulation rate in Pond 1 and should reduce the concentrations of certain waste constituents in Pond 1 seepage.

Recommendation 17: Include a provision requiring the discharger to submit a technical report, when directed in writing by the Executive Officer, describing a project to line wastewater ponds in the event soil monitoring shows excessive waste constituent concentrations with depth in pond bottom soils. Require the discharger to line the wastewater ponds within 120 days following issuance of written notice by the Executive Officer that pond lining is necessary to comply with the WDR. Require the discharger to submit a technical report prepared by a California registered civil engineer within 45 days of project completion certifying that the pond liners were installed as approved.

RESIDUAL SOLIDS DISPOSAL. Finding 9 states, "The pistachio hulls are removed from the wastewater ponds biannually and evenly applied and incorporated into 100 acres of open land." The Tentative Order does not adequately characterize the management and disposal of the residual solids generated by the treatment of wastewater for settleable solids removal. The Information Sheet indicates that 500 tons of residual solids are discharged every two years to "open land." With only seasonal (and likely sparse) growth of grasses and wildflowers, there will be limited uptake of applied nutrients and salts. To be considered a soil amendment, residual solids must be applied to render soil more productive for cultivation. To be considered a reused waste, residual solids must be applied to cultivated land in lieu of a like amount of fertilizer. The discharge's disposal of residual solids is not a discharge of waste to land for use as a soil amendment or an example of waste reuse. Under the current discharge configuration, absent purposeful cultivation of Solids Application Areas, the Regional Board should not exempt the discharge of residual solids to fallow land from compliance with Title 27.

> Recommendation 18: Revise Finding 45 to delete the reference to Title 27, section 20090(h) (Reuse), and prohibit the discharge of residual solids to uncultivated land. Or, revise the Tentative Order to require all Solids Application Areas be cultivated and otherwise be subject to the same applicable specifications as the Wastewater Application Area (D.1, D.2, D.3, D.6, D.7, D.8, and D.9).
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> Recommendation 19: Include a finding that describes onsite pond sludge handling methods and area(s); characterizes the residual solids discharge for appropriate waste constituents of concern, including metals; and estimates the loading rates of nitrogen and salinity to areas receiving periodic pond sludge discharges.
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> Recommendation 20: If the Tentative Order allows the discharge of residual solids to uncultivated land, provide justification for this apparent inconsistency with Title 27 requirements and revise the Tentative Monitoring and Reporting Program to require monitoring of solids prior to land application for nitrogen compounds, major salinity constituents (e.g., sodium and potassium), and metals.

pH EFFLUENT LIMITATION. The waste characterization for the discharge to the irrigation reservoir in Finding 12 does not include the parameter of pH. The Tentative Order prescribes one effluent limitation: the median pH of the discharge shall not be less than 4.5 or greater than 9.0 through the length of each discharge season. The Tentative Order does not provide technical justification for the effluent limitation or explain why it applies to the median pH value over the entire length of the discharge season and not to daily-collected pH values. Presumably, the effluent limitation applies to the discharge to the irrigation reservoirs and the period over which median pH is to be evaluated is the entire six- to eight-week discharge season. It appears that, if the median value of effluent pH (monitored daily) during the discharge season falls out of the cited range, then the exceedance of this one value would be considered a single violation of the pH effluent limitation. The problem with this approach is that effluent pH could exceed the limitation every day during the discharge season, yet the chronic violations would be effectively lumped into one violation, a tactic that appears to downplay the severity of chronic noncompliance. In any event, the effluent limitation's generous pH range may impair biological degradation of applied waste, adversely affect soil pH, and impair crop yield.

Recommendation 21: Revise Finding 12 to include pH, and to describe the method used to determine mean pH. Include a finding that provides technical justification for the proposed effluent limitation for pH, and includes information regarding soils in the Waste Application Area showing that they have sufficient buffering capacity to receive low or high pH waste without excessive soil amendment applications to adjust for soil pH.

Recommendation 22: Revise Effluent Limitation B.1 to specify the discharge as the discharge to the irrigation reservoirs.

METALS. Food processing wastewaters that are acidic may leach metals from metallic components in the wastewater collection, distribution, storage, and disposal systems.

Recommendation 23: If there are available data, revise Finding 12 (and the Information Sheet) to characterize effluent for metals (i.e., aluminum, chromium, copper, lead, molybdenum, nickel, and zinc). If the effluent has not yet been characterized for metals, revise the Tentative Monitoring and Reporting Program to require effluent monitoring for metals at least three times in non-consecutive weeks during the first processing season following order adoption. If reported values are non-detect, reduce effluent monitoring frequency for metals to once every three years. Also revise the Tentative Monitoring and Reporting Program to include metals in the suite of waste constituents monitored in the solids discharge.

BOD LOADING. Finding 17 does not characterize the BOD load on the day of application (i.e., the Instantaneous BOD load), and cites an average BOD load of 103 lbs/acre/day derived from the maximum discharge flow rate of 4.6 mgd, total daily application area of 1,460 acres, and, according to staff, a discharge BOD concentration of 3,900 mg/L. Because the daily discharge is not actually applied uniformly to the entire 1,460-acre Wastewater Application Area, the cited average BOD load is not very informative. The Finding should characterize the instantaneous BOD load, as well as the resting intervals typifying the discharge operation, to allow the reviewing public to evaluate the discharge's potential to overload the soil with organics and create objectionable odors.

Recommendation 24: Revise Finding 17 to characterize the discharge's instantaneous BOD loading for the irrigation method used in the Reuse Area (i.e., sprinkler), and the resting intervals that typify the discharge operation. The finding should also describe how crop cultivation practices (e.g., nut harvest) would not limit the use of the Wastewater Application Area during the discharge season.

Recommendation 25: Include a discharge specification that states, "The discharge of process wastewater shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications."

POTASSIUM LOADING. Pistachios are rich in potassium and, consequently, the Plant's discharge contains high concentrations of potassium. At an annual discharge flow of 130 million gallons, Wastewater Application Area of 1,460 acres, and mean potassium concentration of 583 mg/L, the annual potassium loading to the pistachio crops comprising the Wastewater Application Area exceeds

400 lbs/acre. The Tentative Order does not describe the annual potassium demand for pistachio. According to the Pistachio Production Manual, 5th Edition (2008), the annual potassium demand for pistachio ranges from 110 to 220 lbs/acre for "on" years (when yields are highest) and 36 to 100 lbs/acre for "off" years when yields are light. Based on these referenced values, the proposed discharge's annual potassium loading of over 400 lbs/acre exceeds the annual crop demand in violation of Wastewater Application Area Specification D.2.

> Recommendation 26: Evaluate the discharge's potential for chronically exceeding the annual crop demand for potassium in violation of Wastewater Application Area Specification D.2. Evaluate whether excessive potassium loading to pistachio reduces yield (or otherwise diminishes uptake of other applied waste constituents). Evaluate whether authorizing potassium storage in the vadose zone is a waste discharge practice consistent with applicable laws and regulations and Regional Board plans and policies. Revise Wastewater Application Area Specification D.2 as appropriate based on the results of these evaluations.

ANTIDEGRADATION ANALYSIS. The Tentative Order contains several findings relating to an antidegradation analysis of the proposed discharge, but it does not identify the individual(s) responsible for conducting the analysis. The Tulare Lake Basin Plan, Page IV-21, establishes that it is the discharger's responsibility to include information in its report of waste discharge "regarding the nature and extent of the discharge and the potential for the discharge to affect surface or ground water quality in the region." Finding 1 (or the Information Sheet) should state whether the 2003 RWD and supplemental documents contain the results of an antidegradation analysis. If these documents did not contain the analysis, then staff should have determined the RWD incomplete. In any event, Regional Board members (and the public) should be informed when the discharger has failed to submit an antidegradation analysis with its RWD, thereby requiring staff to use State resources to conduct the analysis.

> Recommendation 27: Revise Finding 1 (or the Information Sheet) to indicate whether the discharger's 2003 RWD (and supplements) included an antidegradation analysis and, if correct, identify staff as responsible for conducting the antidegradation analysis summarized in Findings 39 through 41. Please include in the Staff Response to Comments a discussion explaining staff's procedures for processing reports of waste discharge that lack an antidegradation analysis, and any updates on staff's efforts to prepare an Information Needs Sheet for Antidegradation Analysis.
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> Recommendation 28: Re-evaluate Finding 39.c to account for the apparent fact that the discharge's annual potassium loading to the Waste Application Area exceeds reasonable agronomic demand. Consider whether authorizing the discharger to store increasing quantities of potassium in the vadose zone is consistent with applicable laws and regulations and Regional Board plans and policies.

SOIL MONITORING. The Tentative Monitoring requires monitoring of soils only in the Solids Application Area. Because potassium and possibly other waste constituents are discharged to the Wastewater Application Area at rates exceeding agronomic demand, soil in this area should be

monitored to assess the extent to which potassium and other applied waste constituents attenuate with depth. A recently circulated tentative waste discharge requirements for a similar discharge (Nichols Pistachio) requires soil monitoring in wastewater application areas. The Tentative Order does not explain why it does not require soil monitoring in areas used for wastewater reuse and disposal.

The Monitoring and Reporting Program requires the discharger to establish at least five soil profile monitoring stations within three Solids Application Areas with a combined area of 100 acres, and at least one representative background location. This requirement amounts to one soil sample profile monitoring station per 20 acres, which appears acceptable provided waste is evenly applied. Reliance on only one background soil profile monitoring station for the Solids Application Areas should be re-evaluated because the three areas are not contiguous. Also, soil samples submitted for laboratory analyses are usually composited from multiple samples collected in the same general sample area from the same depth. Best management practices for this discharge should include soil sampling that is at least as stringent as accepted agricultural soil sampling methods.

> Recommendation 29: Revise the Tentative Order's Monitoring and Reporting Program to require the discharger to establish at least one soil profile monitoring station per 40 acres of Wastewater Application Area and at least three representative background soil profile locales for use in evaluating all soil monitoring data.
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> Recommendation 30: Require composite sampling of each profile monitoring station in order to provide data that better represent the discharge's affect on soil quality.
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> Recommendation 31: Because of the inherent difficultly of evaluating soil monitoring data and interpreting the data with respect to the discharge's potential to affect water quality, revise the Tentative Order to require the discharger to (1) submit at least three months prior to the first soil sampling event a written soil sampling plan prepared by a California registered civil engineer with experience in evaluating the impacts to soil and groundwater from discharges of food processing waste, and (2) include in each Annual Monitoring Report an evaluation by a California registered civil engineer of monitoring data (effluent, solids, Wastewater Application Area, Solids Application Area, and soil) for the past processing season and previous processing seasons (as appropriate) that shows the discharge is being conducted in compliance with the order.

REFERENCE TO WATER RECYCLING POLICY. Finding 42 cites State Water Resources Control Board Resolution 77-1, *Policy with Respect to Water Recycling in California*. However, this policy does not apply to this discharge because the high-strength wastewater applied to the Wastewater Application Area is not recycled water as defined in California Water Code, section 13050(n).

> Recommendation 32: Delete Finding 42.

DISCHARGE COMPLEXITY RATING. Finding 44.b indicates staff has determined the discharge complexity as being Category C for annual fee purposes, and explains that this category applies to the discharge because, among other things, it has no wastewater treatment. However, Finding 7 clearly characterizes Pond 1 as a wastewater treatment pond (settleable solids removal). This type of treatment requires periodic sludge removal, drying, and disposal,

and should be considered sufficiently complicated on an operation and maintenance basis to classify the discharge as Category B complexity.

> Recommendation 33: Revise Finding 44.b to change the complexity of the discharge to Category B.

I appreciate the opportunity to offer these recommendations.

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